IN THE CLAIMS:

Please AMEND claims 3, 32, 51, and 63, as shown below.

1. (Previously Presented) A method of compensating for a radiation pattern in a radio system, the method comprising:

forming a primary radiation pattern by weighting signals of at least two functional antenna branches of a base station;

disconnecting at least one antenna branch; and

forming a radiation pattern that compensates for the primary radiation pattern by weighting signals of the functional antenna branches.

2. (Previously Presented) A method of weighting signals in a radio system, the method comprising:

weighting signals of at least two functional antenna branches of a base station with primary weights to form a primary radiation pattern;

disconnecting at least one antenna branch; and

weighting signals of the functional antenna branches with weights that compensate for the primary weights to form a compensating radiation pattern.

3. (Currently Amended) A method of weighting signals in a radio system, the method comprising:

weighting signals of at least two functional antenna branches of a base station with primary weights to form a primary radiation pattern;

disconnecting at least one antenna branch based on a command indicating a fault in an antenna element, antenna feeding cable, or power amplifier; and

weighting signals of the functional antenna branches with previously known weights that compensate for the primary weights to form a compensating radiation pattern.

4. (Previously Presented) The method according to claim 2, further comprising:

weighting signals of the functional antenna branches with weights that differ from the primary weights.

5. (Previously Presented) The method according to claim 1 or 2, wherein the primary radiation pattern is fixed and the compensating radiation pattern is fixed.

6. (Previously Presented) The method according to claim 1 or 2, wherein the primary radiation pattern is the radiation pattern used in transmission, the disconnected antenna branch is the transmitting antenna branch, and the compensating radiation pattern is the radiation pattern used in transmission.

7. (Previously Presented) The method according to claim 1 or 2, wherein the primary radiation pattern is the radiation pattern used in transmission, the disconnected antenna branch is the transmitting antenna branch, and the compensating radiation pattern is the radiation pattern used in transmission; and

wherein a radiation pattern that is to be used in reception and corresponds to the compensating radiation pattern used in transmission is formed by weighting signals of the receiving antenna branches.

8. (Previously Presented) The method according to claim 1 or 2, wherein the primary radiation pattern is the radiation pattern used in reception, the disconnected antenna branch is the receiving antenna branch, and the compensating radiation pattern is the radiation pattern used in reception.

9. (Previously Presented) The method according to claim 1 or 2, wherein the primary radiation pattern is the radiation pattern used in reception, the disconnected antenna branch is the receiving antenna branch, and the compensating radiation pattern is the radiation pattern used in reception; and

wherein a radiation pattern that is to be used in transmission and corresponds to the compensating radiation pattern used in reception is formed by weighting signals of the transmitting antenna branches.

10. (Previously Presented) The method according to claim 1 or 2, further comprising:

forming the radiation pattern that compensates for the primary radiation pattern by weighting signals of the functional antenna branches so that compensation occurs in the azimuth direction.

11. (Previously Presented) The method according to claim 1 or 2, further comprising:

forming the radiation pattern compensating for the primary radiation pattern by weighting signals of the functional antenna branches so that compensation occurs in the elevation direction.

12. (Previously Presented) The method according to claim 1 or 2, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches with previously known weights.

13. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches with weights that differ from the weights used to form the primary radiation pattern.

14. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches digitally.

15. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches with weights that are based on the configuration of the functional antenna elements in the antenna array.

16. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches with weights that are based on the radiation patterns formed by single antenna elements.

17. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches with weights that are based on the weighting function of the aperture of the antenna array.

18. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches so that the main beams of the compensating radiation pattern overlap at least partly with the main beams of the primary radiation pattern.

19. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with at least one main beam of the compensating radiation pattern.

20. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and coding of the signals of the compensating main beam is the same as the coding of the signals of the main beam to be compensated for.

21. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating radiation pattern by weighting signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the identification signal of the compensating main beam is the same as the identification signal of the main beam to be compensated for.

22. (Previously Presented) The method according to claim 1, further comprising:

forming the compensating antenna beam structure by weighting signals of the functional antenna branches so that the dynamic range of the main beams of the compensating radiation pattern is optimized.

23. (Previously Presented) The method according to claim 1, further comprising:

calibrating the functional antenna branches after the compensating radiation pattern has been formed.

24. (Previously Presented) The method according to claim 1, further comprising:

forming a command for disconnecting at least one antenna branch; and

disconnecting said at least one antenna branch based on the command formed.

25. (Previously Presented) A radio system comprising:

a base station configured to form a radio interface of the radio system;

the base station comprises at least two antenna branches for establishing a radio link to terminals;

each antenna branch comprises at least one antenna element configured to form an antenna array; and

the base station comprises weighting means for weighting signals of the functional antenna branches configured to form a primary radiation pattern,

wherein the base station is configured to disconnect at least one antenna branch; and

wherein the weighting means is configured to weight signals of the functional antenna branches to form a radiation pattern that compensates for the primary radiation pattern.

26. (Previously Presented) The radio system according to claim 25, wherein the base station is configured to form a fixed primary radiation pattern; and

wherein the weighting means is configured to form a fixed compensating radiation pattern.

27. (Previously Presented) The radio system according to claim 25, wherein the antenna branches are configured to transmit a signal;

wherein the weighting means is configured to weight transmission signals of the antenna branches;

wherein the base station is configured to disconnect at least one transmitting antenna branch; and

wherein the weighting means is configured to weight the transmission signals of the functional antenna branches to form a radiation pattern for transmission that compensates for the primary radiation pattern used for transmission.

28. (Previously Presented) The radio system according to claim 25, wherein the antenna branches are configured to transmit a signal;

wherein the weighting means is configured to weight transmission signals of the antenna branches;

wherein the base station is configured to disconnect at least one transmitting antenna branch;

wherein the weighting means is configured to weight transmission signals of the functional antenna branches to form a radiation pattern for transmission that compensates for the primary radiation pattern used in transmission; and

wherein the weighting means is also configured to weight receiving signals of the antenna branches so that the radiation pattern for reception corresponds to the compensating radiation pattern used in transmission.

29. (Previously Presented) The radio system according to claim 25, wherein the antenna branches are configured to receive a signal;

wherein the weighting means is configured to weight reception signals of the antenna branches;

wherein the base station is configured to disconnect at least one receiving antenna branch;

wherein the weighting means is configured to weight reception signals of the functional antenna branches to form a radiation pattern for reception that compensates for the primary radiation pattern used in reception; and

wherein the weighting means is also configured to weight transmission signals of the functional antenna branches so that the radiation pattern formed for transmission corresponds to the compensating radiation pattern used in reception.

30. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the antenna branches so that compensation occurs in the azimuth direction.

31. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches so that compensation occurs in the elevation direction.

32. (Currently Amended) A radio system comprising:

a base station configured to form a radio interface of the radio system;

the base station comprises at least two antenna branches for establishing a radio link to terminals;

each antenna branch comprises at least one antenna element configured to form an antenna array; and

the base station comprises weighting means for weighting signals of the functional antenna branches configured to form a primary radiation pattern,

wherein the base station is configured to disconnect at least one antenna branch based on a command indicating a fault in an antenna element, antenna feeding cable, or power amplifier; and

wherein the weighting means is configured to weight signals of the functional antenna branches with previously known weights to form a radiation pattern that compensates for the primary radiation pattern.

33. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches digitally to form a compensating radiation pattern.

34. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches with

weights that are based on the configuration of the functional antenna elements in the antenna array.

35. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches with weights that are based on the radiation patterns formed by single functional antenna elements.

36. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches with weights that are based on the weighting function of the aperture in the antenna array.

37. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches so that the main beams of the compensating radiation pattern overlap at least partly with the main beams of the primary radiation pattern.

38. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with at least one main beam of the compensating radiation pattern.

39. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the coding of the signals of each compensating main beam is the same as the coding of the signals of the main beam to be compensated for.

40. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the identification signal of each compensating main beam is the same as the identification signal of the main beam to be compensated for.

41. (Previously Presented) The radio system according to claim 25, wherein the weighting means is configured to weight signals of the functional antenna branches so that the dynamic range of the main beams of the compensating radiation pattern is optimized.

42. (Previously Presented) The radio system according to claim 25, wherein the base station comprises means for calibrating the antenna branches.

43. (Previously Presented) The radio system according to claim 25, wherein the base station is configured to form a command for disconnecting at least one antenna branch; and

wherein the base station is configured to disconnect said at least one antenna branch based on the command formed.

44. (Previously Presented) A base station of a radio system, comprising:

at least two antenna branches for establishing a radio link to terminals, each antenna branch comprising at least one antenna element for forming an antenna array; and

weighting means for weighting signals of the functional antenna branches to form a primary radiation pattern,

wherein the base station is configured to disconnect at least one antenna branch, and

wherein the weighting means is configured to weight signals of the functional antenna branches to form a radiation pattern that compensates for the primary radiation pattern.

45. (Previously Presented) The base station according to claim 44, wherein the base station is configured to form a fixed primary radiation pattern, and

wherein the weighting means sis configured to form a fixed compensating radiation pattern.

46. (Previously Presented) The base station according to claim 44, wherein the antenna branches are configured to transmit a signal,

wherein the weighting means are configured to weight transmission signals of the antenna branches,

wherein the base station is configured to disconnect at least one transmitting antenna branch, and

wherein the weighting means is configured to weight the transmission signals of the functional antenna branches to form a radiation pattern for transmission that compensates for the primary radiation pattern used for transmission.

47. (Previously Presented) The base station according to claim 44, wherein the antenna branches are configured to transmit a signal,

wherein the weighting means is configured to weight transmission signals of the antenna branches,

wherein the base station is configured to disconnect at least one transmitting antenna branch,

wherein the weighting means is configured to weight transmission signals of the functional antenna branches to form a radiation pattern for transmission that compensates for the primary radiation pattern used in transmission, and

wherein the weighting means is also configured to weight receiving signals of the antenna branches so that the radiation pattern for reception corresponds to the compensating radiation pattern used in transmission.

48. (Previously Presented) The base station according to claim 44, wherein the antenna branches are configured to receive a signal,

wherein the weighting means is configured to weight reception signals of the antenna branches,

wherein the base station is configured to disconnect at least one receiving antenna branch,

wherein the weighting means is configured to weight reception signals of the functional antenna branches to form a radiation pattern for reception that compensates for the primary radiation pattern used in reception, and

wherein the weighting means is also configured to weight transmission signals of the functional antenna branches so that the radiation pattern formed for transmission corresponds to the compensating radiation pattern used in reception.

49. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the antenna branches so that compensation occurs in the azimuth direction.

50. (Previously Presented) The radio system according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches so that compensation occurs in the elevation direction.

51. (Currently Amended) A base station of a radio system, comprising:

at least two antenna branches for establishing a radio link to terminals, each antenna branch comprising at least one antenna element for forming an antenna array; and

weighting means for weighting signals of the functional antenna branches to form a primary radiation pattern,

wherein the base station is configured to disconnect at least one antenna branch based on a command indicating a fault in an antenna element, antenna feeding cable, or power amplifier, and

wherein the weighting means is configured to weight signals of the functional antenna branches with previously known weights to form the compensating radiation pattern.

52. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches digitally to form a compensating radiation pattern.

53. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches with weights that are based on the configuration of the functional antenna elements in the antenna array.

54. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches with weights that are based on the radiation patterns formed by single functional antenna elements.

55. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches with weights that are based on the weighting function of the aperture in the antenna array.

56. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches so

that the main beams of the compensating radiation pattern overlap at least partly with the main beams of the primary radiation pattern.

57. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with at least one main beam of the compensating radiation pattern.

58. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the coding of the signals of each compensating main beam is the same as the coding of the signals of the main beam to be compensated for.

59. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the identification signal of each compensating main beam is the same as the identification signal of the main beam to be compensated for.

60. (Previously Presented) The base station according to claim 44, wherein the weighting means is configured to weight signals of the functional antenna branches so that the dynamic range of the main beams of the compensating radiation pattern is optimized.

61. (Previously Presented) The base station according to claim 44, wherein the base station comprises means for calibrating the antenna branches.

62. (Previously Presented) The base station according to claim 44, wherein the base station is configured to form a command for disconnecting at least one antenna branch; and

wherein the base station is configured to disconnect said at least one antenna branch based on the command formed.

63. (Currently Amended) A method of compensating for a radiation pattern in a radio system, the method comprising:

forming a primary radiation pattern by weighting signals of at least two functional antenna branches of a base station;

disconnecting at least one antenna branch based on a command indicating a fault in an antenna element, antenna feeding cable, or power amplifier; and

forming a radiation pattern that compensates for the primary radiation pattern by weighting signals of the functional antenna branches with previously known weights.